

IN THE CLAIMS:

Please cancel Claims 16-27, and 38 without prejudice.

Please amend the claims as is indicated below:

28. (Twice amended) A load bearing structure having a closed-loop configuration in cross-section defining a predetermined interior, comprising an integrated, chemically continuous composite material having a plurality of regions continuing progressively from an outside of said structure to said interior of said structure, said composite material comprising:

a. a first compositional region comprising a porous, mineral-containing substrate having pores;

b. a second compositional region comprising a thermoset material chemically bonded by silane to, and intermixed with at least some of the mineral and within said pores of said substrate to form a matrix;

c. a third compositional region proximate and interphased with said second compositional region consisting of a thermoset material selected from the group consisting of polyurethane, epoxy and combinations thereof, and including silane;

d. a fourth compositional region proximate said third compositional region
15 and consisting of polyvinyl chloride having a substantial amount of hydroxyl ions
molecularly bonded to some ~~isocyanates~~; and

Claim
e. a sheet of high tensile strength rigid polyvinyl chloride material having a
flexural modulus of approximately 350,000 to 650,000 proximate to and defining said
predetermined interior having a predetermined boundary and a predetermined interior
20 dimensions, said high tensile strength rigid polyvinyl chloride material sheet having a
tensile strength of at least 2200 pounds per square inch, wherein said high tensile strength
rigid polyvinyl chloride material and thermoset material are bonded together and to said
substrate with sufficient shear strength to transmit and distribute loads on said substrate to
said high tensile strength rigid polyvinyl chloride material to improve the structural load
25 bearing strength of said load bearing structure.

30
30. (Amended) The load bearing structure of Claim 28 in which the rigid
polyvinyl chloride material has a tensile strength in the range of from 5,000 psi to 10,000
psi.

32. (Amended) The load bearing structure of Claim 28 wherein said first face of said rigid polyvinyl chloride material sheet has a surface area, and wherein said integrated composite material further comprises means positioned on said first face of said rigid polyvinyl chloride material sheet for increasing the surface area of said first face.

33. (Amended) The load bearing structure of Claim 32 wherein said means for increasing said surface area of said first face comprises ridges raised from said first face, comprising surface areas generally perpendicular to said rigid polyvinyl chloride material sheet.

35. (Amended) The load bearing structure of Claim 33 wherein said raised ridges are positioned circumferentially in relation to said conduit.

36. (Twice amended) A method for lining a conduit having a porous substrate surface, the method comprising the steps of:
impregnating a face of a sheet of high tensile strength rigid polyvinyl chloride material having a flexural modulus of approximately 350,000 to 650,000 with a

5 reactive resin that chemically bonds with a curing agent;

positioning said sheet of high tensile strength rigid polyvinyl chloride material within the interior of said conduit spaced apart from said substrate surface to create a space between said rigid polyvinyl chloride material sheet and said substrate surface;

10 inserting a mixture of a thermosetting material and said curing agent within said space; and

allowing said thermosetting material to bond with said substrate surface, and allowing said face of said rigid polyvinyl chloride material to chemically bond with said curing agent of said thermosetting material, wherein said rigid polyvinyl chloride material and thermosetting material are bonded together and to said substrate surface with sufficient shear strength to transmit and distribute loads on said substrate surface to said high tensile strength rigid polyvinyl chloride material to reinforce said conduit.

43. (Amended) The method of Claim 36, further comprising the step of forming raised ridges on said face of said rigid polyvinyl chloride material to increase the surface area of said face.